



**SITE ASSESSMENT REPORT
FOR THE
EASTERN MARKET SITE
DETROIT, WAYNE COUNTY, MICHIGAN**

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V
Emergency Response Branch
9311 Groh Road
Grosse Ile, MI 48138

Prepared by:

WESTON SOLUTIONS, INC.
Suite R, 360 E. Maple Road
Troy, MI 48083

Date Prepared:	November 19, 2010
Technical Direction Document No.:	S05-0001-1005-032
Document Control No.:	1065-2A-AHLA
Contract No.:	EP-S5-06-04
WESTON START Project Manager:	Lori Kozel
Telephone No.:	(248) 658-5012
U.S. EPA On-Scene Coordinator:	Tricia Edwards

**SITE ASSESSMENT REPORT
FOR THE
EASTERN MARKET SITE
DETROIT, WAYNE COUNTY, MICHIGAN**

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V
Emergency Response Branch
9311 Groh Road
Grosse Ile, MI 48138

Prepared by:

WESTON SOLUTIONS, INC.
Suite R, 360 E. Maple Road
Troy, MI 48083

November 19, 2010

Prepared by:  Date 11/19/10
Matthew Beer
WESTON START Site Lead

Reviewed by:  Date 11/19/10
Lori Kozel
WESTON START Project Manager

TABLE OF CONTENTS

1.	INTRODUCTION.....	1
2.	SITE BACKGROUND.....	1
2.1	SITE DESCRIPTION	2
2.2	SITE HISTORY	2
3.	SITE ASSESSMENT ACTIVITIES	2
3.1	SITE RECONNAISSANCE	3
3.2	SITE OBSERVATIONS.....	3
3.3	XRF SCREENING ACTIVITIES	3
3.4	SOIL SAMPLING ACTIVITIES	4
4.	RESULTS	4
4.1	XRF SCREENING RESULTS	4
4.2	LABORATORY ANALYTICAL RESULTS	5
5.	CONCLUSIONS	5

LIST OF FIGURES

- Figure 1-1** Site Location Map
Figure 3-1 XRF Screening Location Map
Figure 4-1 XRF Lead Results
Figure 4-2 Soil Analytical Results

LIST OF TABLES

- Table 4-1** XRF Results – Metals Sample Summary
Table 4-2 Laboratory Results – Metals
Table 4-3 Laboratory Results – TCLP Metals

LIST OF APPENDICES

- Appendix A** Photographic Documentation
Appendix B Data Validation Report

LIST OF ABBREVIATIONS AND ACRONYMS

CFR	Code of Federal Regulations
DEA	Department of Environmental Affairs
GPS	Global positioning system
MDNRE	Michigan Department of Natural Resources and Environment
OSC	On-Scene Coordinator
ppm	Part per million
SA	Site assessment
START	Superfund Technical Assessment and Response Team
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
U.S. EPA	United States Environmental Protection Agency
VSP	Visual Sampling Plan
WESTON	Weston Solutions, Inc.
XRF	X-ray fluorescence

1. INTRODUCTION

Under Technical Direction Document No. S05-0001-1005-032, the United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to assist the U.S. EPA On-Scene Coordinator (OSC) in performing a site assessment (SA) at the Eastern Market Site in Detroit, Wayne County, Michigan (the Site) (**Figure 1-1**). Specifically, U.S. EPA requested that WESTON START assess and collect x-ray fluorescence (XRF) readings from surficial soil; collect soil samples based on the XRF readings; collect photographic documentation; and evaluate the potential for imminent and substantial threats to human health, human welfare, and the environment posed by the Site. The SA was conducted on June 28, 2010, under the direction of OSC Tricia Edwards.

This SA report is organized into the following sections:

- **Introduction** – Provides a brief description of the objective and scope of SA activities;
- **Site Background** – Details the Site description and history;
- **Site Assessment Activities** – Discusses the Site reconnaissance, Site observations, and sampling activities during the SA;
- **Results**– Discusses XRF screening results and laboratory analytical results for samples collected during the SA; and
- **Conclusions** – Summarizes Site assessment findings.

Figures and tables are presented after the conclusions section. In addition, this SA report contains two appendices. Appendix A provides photographic documentation of Site conditions during the SA, and Appendix B provides the data validation report for the soil sample results.

2. SITE BACKGROUND

This section discusses the Site description and history.

2.1 SITE DESCRIPTION

The Site is located just northwest of the intersection of Rivard Street and Wilkins Street. The Site's approximate geographical coordinates are 42° 20' 58" North latitude and 83° 02' 42.75" West longitude. **Figure 1-1** shows the Site location. The Site currently consists of an open grassy lot of about 3.5 acres with no buildings or structures. The Site is approximately 1.4 miles north of the Detroit River.

The Site property is bordered to the north by commercial properties, to the south by Wilkins Street and commercial properties, to the east by Rivard Street and commercial properties, and to the west by Chrysler Drive and I-75. The Site has no perimeter fencing or obstructions to deter people or wildlife from entering the property, and a school is located 0.4 mile west of the Site.

2.2 SITE HISTORY

Historical aerial images show that no structures have been present at the Site since 1999. In May 2010, the City of Detroit Department of Environmental Affairs (DEA) requested assistance from the U.S. EPA Region 5 Emergency Response Branch in performing a SA to evaluate potential threats to human health and the environment posed by the Site.

On May 13, 2010, U.S. EPA, WESTON START, and the City of Detroit conducted a windshield survey of the Site property and observed the current status of the Site before conducting the SA. The Site was observed to consist of a vacant parcel with vegetation and no buildings. The Site had no perimeter fencing or obstructions to deter people or wildlife from entering the property.

3. SITE ASSESSMENT ACTIVITIES

The SA was conducted to evaluate potential threats to human health and the environment posed by metals at the Site and to evaluate the need for further response actions. The following sections discuss the Site reconnaissance, Site observations, and sampling activities conducted during the SA.

3.1 SITE RECONNAISSANCE

On June 28, 2010, U.S. EPA OSC Tricia Edwards and WESTON START members Matthew Beer and Steve Kidder mobilized to the Site. Mr. Robert Brown with the City of Detroit DEA was also present at the Site during the SA. After a brief safety meeting and equipment setup, U.S. EPA and WESTON START personnel began locating the predetermined screening locations identified by the Visual Sampling Plan (VSP) software using a global positioning system (GPS) and flagged each location for screening. **Figure 3-1** shows the screening locations, which are discussed in more detail in Section 3.3 below. During the Site reconnaissance, WESTON START also collected written and photographic documentation of current Site conditions. **Appendix A** provides a photographic log of Site conditions at the time of the Site reconnaissance.

3.2 SITE OBSERVATIONS

At the time of the SA discussed in this report, the Site was a vacant parcel with vegetation and no buildings. The Site had no perimeter fencing or obstructions to deter people or wildlife from entering the property. No hazards were identified during SA activities.

3.3 XRF SCREENING ACTIVITIES

During the SA, WESTON START performed XRF screening for selected metals of surface soil throughout the Site using an Innov-X XRF analyzer. **Figure 3-1** shows the screening locations. WESTON START used the sampling design generated for the Site by the VSP software to identify the XRF screening and potential sampling locations. The VSP software identified 24 screening locations to locate a hotspot with a 50-foot-radius with a 95 percent probability. Figure 3-1 shows 25 locations because at the direction of the OSC, one location (EMS25) was added as a soil sampling location. However, this location was not screened using the XRF analyzer. The VSP software provided coordinates for each location, and a grid was evenly distributed across the Site. The XRF analyzer was used to screen the surface soil at each predetermined location. Where required, surface vegetation was removed to create a flat surface to collect accurate XRF readings.

Based on Site observations and XRF results for 24 locations, the OSC directed WESTON START to collect six soil samples from the Site. Section 4.1 discusses the XRF screening results.

3.4 SOIL SAMPLING ACTIVITIES

WESTON START collected a total of six surface soil samples from the Site from 0 to 3 inches below ground surface. The six sampling locations were selected based on XRF metals results and visual observations made at the Site. At the direction of the OSC, one location (EMS25) was added as a soil sampling location. Soil samples were collected from XRF screening locations EMS08, EMS16, EMS17, EMS20, and EMS21, and from EMS25 using plastic disposable scoops and placed into approved sample containers. The samples were placed on ice and submitted to TriMatrix Laboratories of Grand Rapids, Michigan. All samples were analyzed for Target Analyte List (TAL) metals and Toxicity Characteristic Leaching Procedure (TCLP) metals. Section 4.2 discusses the soil sample results.

4. RESULTS

This section discusses the XRF screening results and the laboratory analytical results.

4.1 XRF SCREENING RESULTS

Table 4-1 summarizes the XRF screening results for the 24 locations screened using the XRF analyzer, and **Figure 4-1** summarizes the XRF lead screening results. The XRF analyzer provides results for 21 metals and typically is used for lead assessments. Historical data evaluations support the correlation between actual sample data from the laboratory and XRF field screening results. For this SA, WESTON START focused on the arsenic, iron, and lead concentrations in surficial soils. Arsenic, iron, and lead contamination typically is of concern in industrial areas in the City of Detroit.

According to the Michigan Department of Natural Resources and Environment (MDNRE) Part 201 - Residential and Commercial I Direct Contact Criteria for soil, a total lead value exceeding

400 parts per million (ppm), a total arsenic value exceeding 7.6 ppm, and a total iron value exceeding 160,000 ppm present a direct contact risk. XRF screening results for two locations exceeded the MDNRE Part 201 lead criterion of 400 ppm (EMS17 and EMS21), XRF screening result for one location exceeded the MDNRE Part 201 arsenic criterion of 7.6 ppm (EMS11), and XRF screening results for one location exceeded the MDNRE Part 201 iron criterion of 160,000 ppm (EMS17). The XRF results also were compared to the State of Michigan Default Background levels. Copper, iron, lead, manganese, and zinc results exceeded the background levels but were below the MDNRE Part 201 Residential and Commercial I Direct Contact Criteria.

4.2 LABORATORY ANALYTICAL RESULTS

Table 4-2 summarizes the laboratory results for metals for the soil samples, and **Figure 4-2** summarizes the soil analytical results. **Appendix B** provides the data validation report for the sample results.

Arsenic, iron, and lead concentrations exceeded MDNRE Part 201 - Residential and Commercial I Direct Contact Criteria in at least one sample. The highest concentrations all were detected in the sample collected from EMS17, which contained arsenic at 14 ppm; iron at 260,000 ppm; and lead at 2,600 ppm. In addition, results for the following metals exceeded the State of Michigan Default Background levels in at least one sample: aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc.

Table 4-3 summarizes the laboratory results for TCLP metals for the soil samples. No TCLP metals sample results exceeded the TCLP criteria specified in Title 40 of the *Code of Federal Regulations* (40 CFR), Part 261.

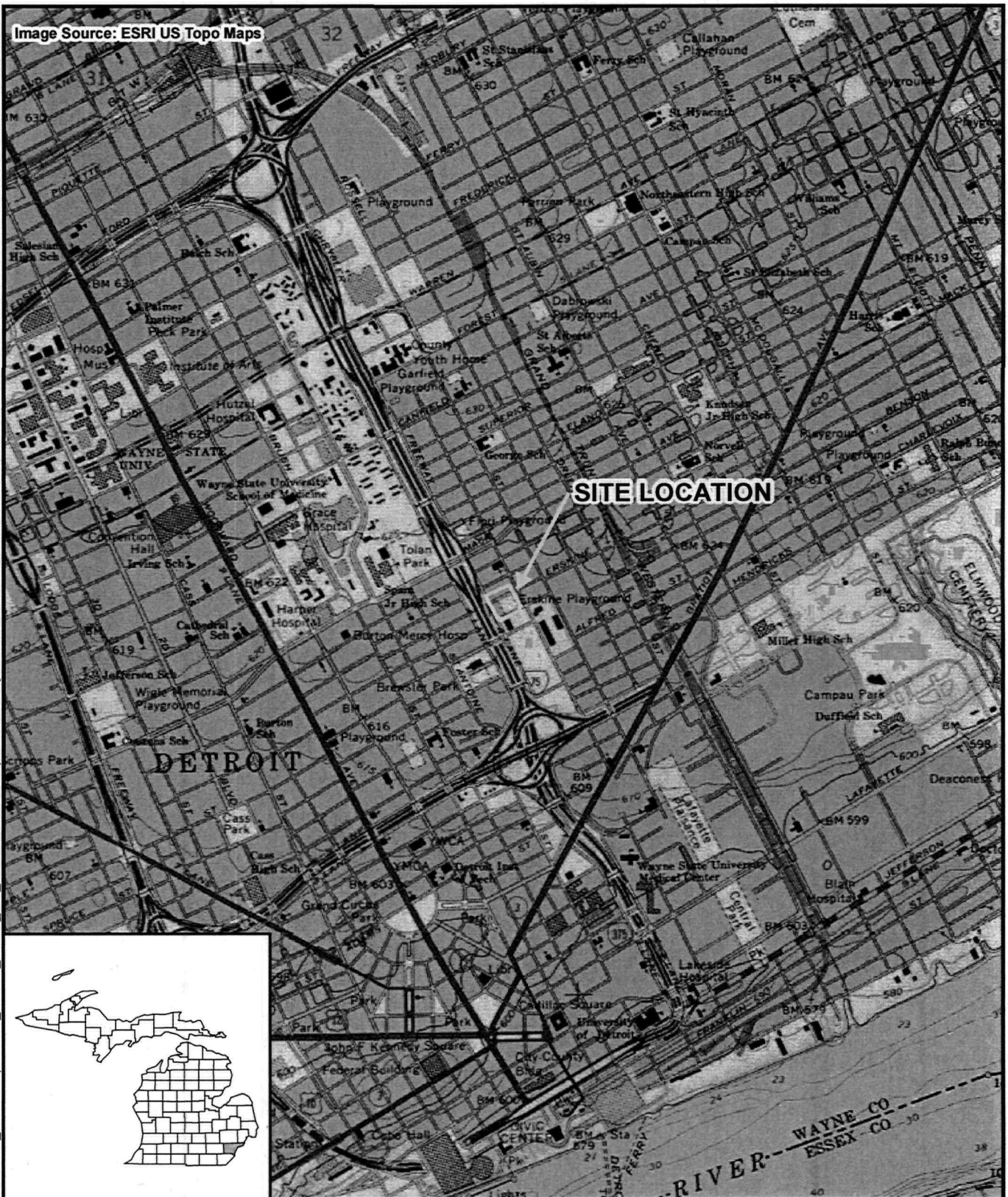
5. CONCLUSIONS

Based on the XRF readings, three locations exceeded the MDNRE Part 201 - Residential and Commercial I Direct Contact Criteria for arsenic, iron, or lead. The XRF results also were compared to the State of Michigan Default Background levels, and copper, iron, lead,

manganese, and zinc results exceeded the background levels but were below the MDNRE Part 201 Residential and Commercial I Direct Contact Criteria. Based on the soil sampling results, arsenic, iron, and lead concentrations exceeded MDNRE Part 201 - Residential and Commercial I Direct Contact Criteria in at least one sample. The highest concentrations all were detected in the sample collected from EMS17. In addition, results for the following metals exceeded the State of Michigan Default Background levels in at least one sample: aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc. No TCLP metals sample results exceeded the TCLP criteria specified in 40 CFR, Part 261. The screening and sampling locations were covered with vegetation during the SA. The focus of this SA was surface soil and potential metals contamination only. A thorough historical review of the Site was not conducted, and other contaminants and deeper subsurface conditions were not assessed.

FIGURES

Image Source: ESRI US Topo Maps



Legend

Property Boundary

0 2,000 Feet



Prepared for:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0001-1005-032
DCN: 1065-2A-AHLA



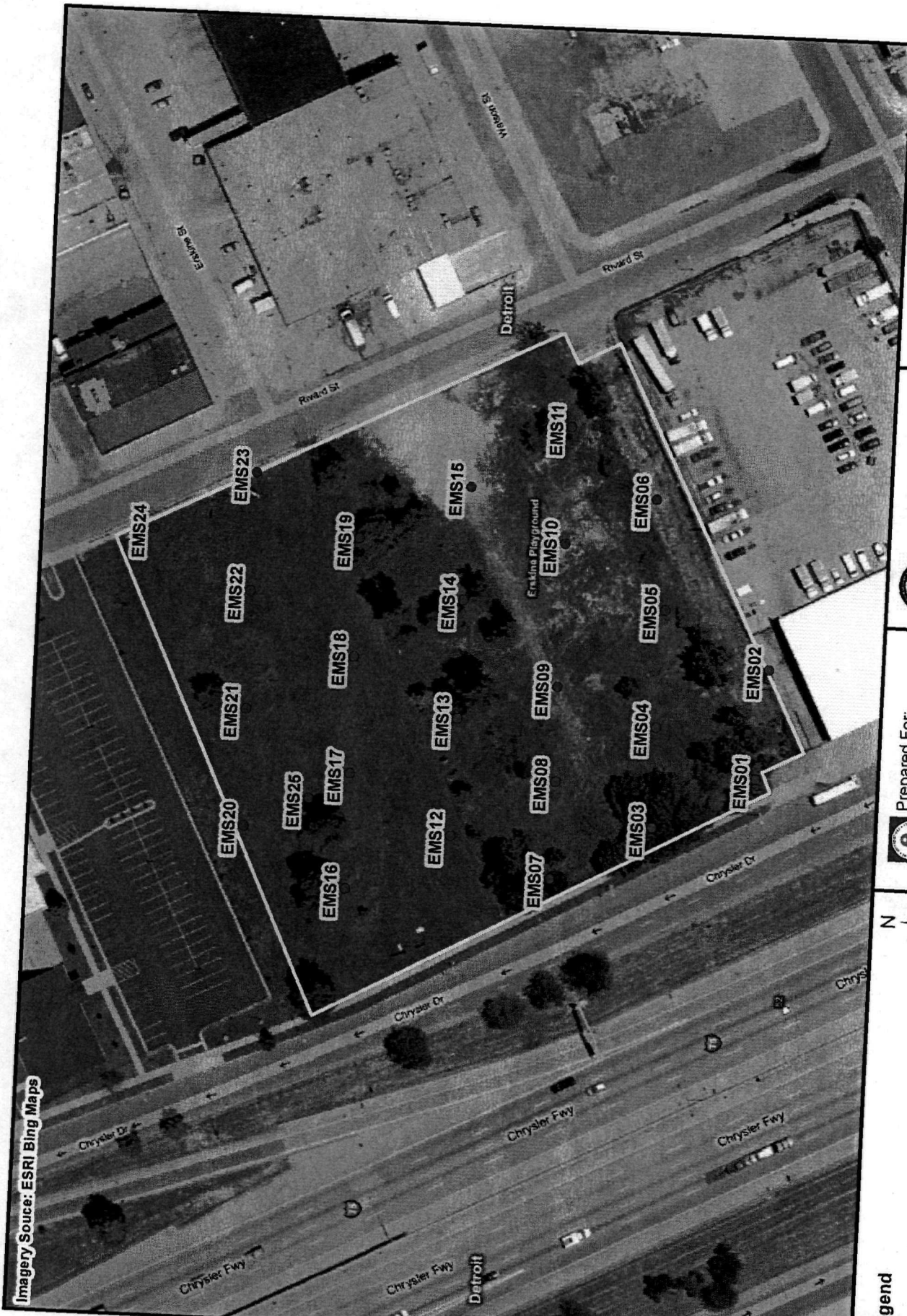
Prepared By:
**WESTON
SOLUTIONS, INC**

360 East Maple Road
Suite R
Troy, Michigan 48083

Figure 1-1

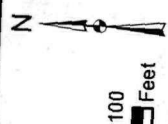
Site Location Map
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Imagery Source: ESRI Bing Maps



Legend

- XRF Screening Location
- Property Boundary



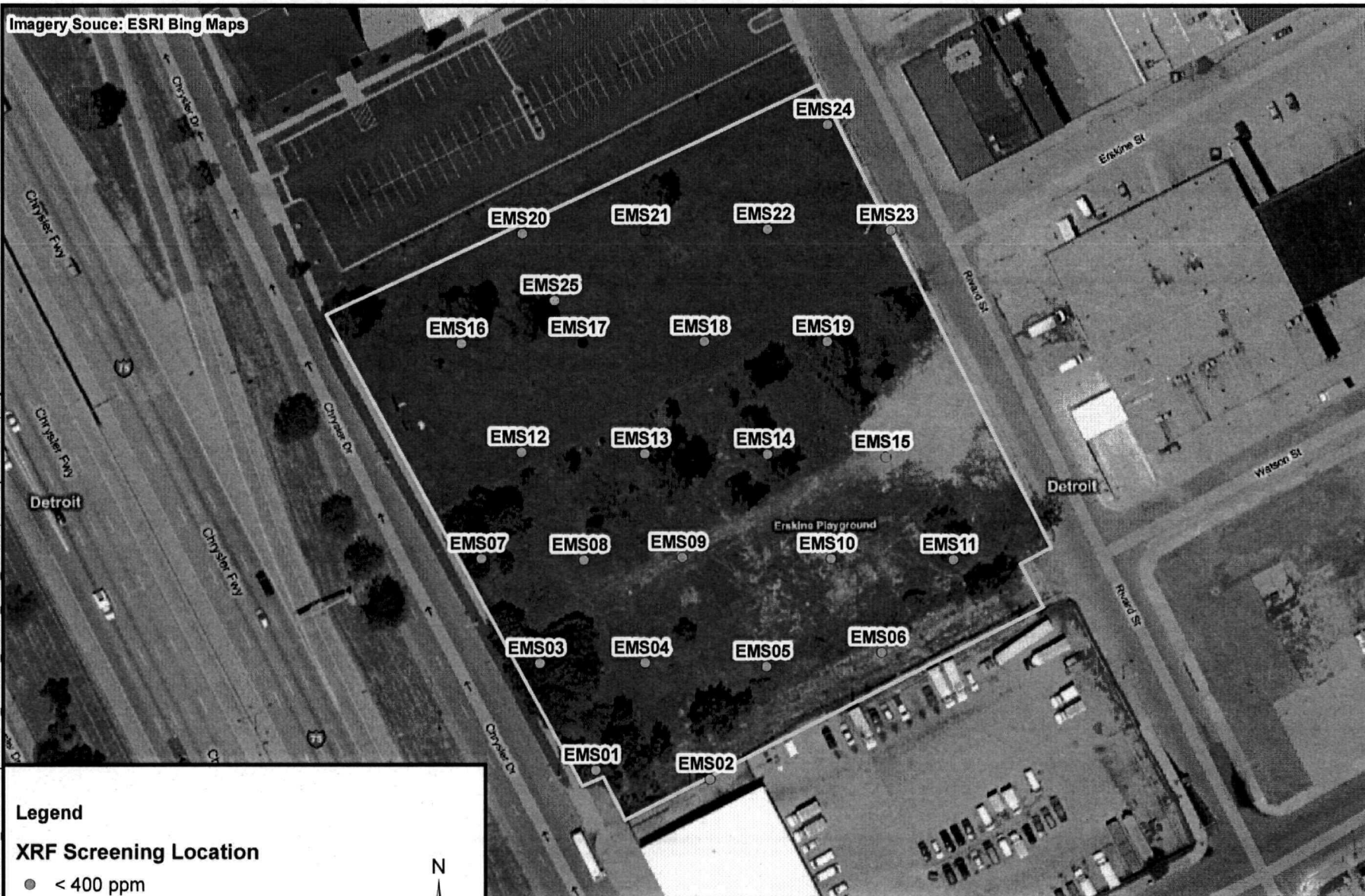
Prepared For:
U.S. EPA REGION V
Contract No.: EP-S5-06-04
TDD: S05-0001-1005-032
DCN: 1065-2A-AHLA



Prepared By:
WESTON SOLUTIONS
360 East Maple Road
Suite R
Troy, Michigan 48063

Figure 3-1
XRF Screening Location Map
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Imagery Source: ESRI Bing Maps



Legend

XRF Screening Location

- < 400 ppm
- 400 - 1,000 ppm
- > 1,000 ppm
- No XRF Reading Collected

Property Boundary

0 100 Feet



Prepared For:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0001-1005-032
DCN: 1065-2A-AHLA



Prepared By:
WESTON SOLUTIONS

360 East Maple Road
Suite R
Troy, Michigan 48083

Figure 4-1
XRF Lead Results
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

TABLES

Table 4-1
XRF Results – Metals Sample Summary
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Chemical Name	State Default Background (ppm)	Field Sample ID	EMS-01	EMS-02	EMS-03	EMS-04	EMS-05	EMS-06	EMS-07	EMS-08	EMS-09
		Sample Date	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010
		Regulatory Limit Soil* (ppm)									
Antimony	NA	180	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Arsenic	5.8	7.6	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Barium	75	37,000	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cadmium	1.2	550	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Chromium	NA	NA	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cobalt	6.8	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Copper	32	20,000	< LOD	46	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	47
Iron	12,000	160,000	12,849	16,286	11353	20,247	15,229	21,311	10,564	18,325	15,224
Lead	21	400	108	245	71	194	29	86	68	395	158
Manganese	440	25,000	117	434	385	1,134	263	2,011	105	1,113	471
Mercury	0.13	160	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Molybdenum	NA	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Nickel	20	40,000	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Rubidium	NA	NA	39	21	23	39	48	21	28	32	31
Selenium	0.41	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Silver	1	2,500	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Strontium	NA	330,000	120	111	117	139	104	543	131	114	127
Tin	NA	NA	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Titanium	NA	NA	2138	1407	1769	< LOD	1440	2511	1162	1960	1660
Zinc	47	170,000	165	539	205	290	106	303	136	263	248
Zirconium	NA	NA	121	76	94	87	97	110	98	84	75

Table 4-1
XRF Results – Metals Sample Summary
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Chemical Name	State Default Background (ppm)	Field Sample ID	EMS-10	EMS-11	EMS-12	EMS-13	EMS-14	EMS-15	EMS-16	EMS-17	EMS-18
		Sample Date	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010
		Regulatory Limit Soil* (ppm)									
Antimony	NA	180	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Arsenic	5.8	7.6	< LOD	51	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Barium	75	37,000	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cadmium	1.2	550	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Chromium	NA	NA	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cobalt	6.8	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Copper	32	20,000	< LOD	53	< LOD	< LOD	< LOD	< LOD	53	< LOD	< LOD
Iron	12,000	160,000	13,124	15,169	12,955	22,474	10,726	18,563	16,927	410,290	11227
Lead	21	400	71	126	74	199	60	169	383	1620	84
Manganese	440	25,000	2,398	1,235	< LOD	1,071	1,674	865	206	4,073	< LOD
Mercury	0.13	160	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Molybdenum	NA	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Nickel	20	40,000	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Rubidium	NA	NA	10	15	41	46	14	22	37	19	35
Selenium	0.41	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Silver	1	2,500	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Strontium	NA	330,000	1164	531	88	186	615	248	112	74	90
Tin	NA	NA	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Titanium	NA	NA	3320	< LOD	1910	1944	1637	1786	1702	< LOD	1570
Zinc	47	170,000	253	306	115	532	246	314	328	7,839	99
Zirconium	NA	NA	133	92	85	87	114	81	99	47	63

Table 4-1
XRF Results – Metals Sample Summary
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Chemical Name	State Default Background (ppm)	Field Sample ID	EMS-19	EMS-20	EMS-21	EMS-22	EMS-23	EMS-24
		Sample Date	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010
		Regulatory Limit Soil ^a (ppm)						
Antimony	NA	180	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Arsenic	5.8	7.6	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Barium	75	37,000	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cadmium	1.2	550	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Chromium	NA	NA	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cobalt	6.8	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Copper	32	20,000	36	56	< LOD	< LOD	< LOD	< LOD
Iron	12,000	160,000	18,034	20,442	25,155	17,624	11,858	15,089
Lead	21	400	312	376	403	237	82	94
Manganese	440	25,000	< LOD	142	< LOD	< LOD	169	858
Mercury	0.13	160	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Molybdenum	NA	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	11
Nickel	20	40,000	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Rubidium	NA	NA	50	54	46	46	40	36
Selenium	0.41	2,600	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Silver	1	2,500	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Strontium	NA	330,000	98	132	101	95	102	353
Tin	NA	NA	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Titanium	NA	NA	3057	3317	< LOD	2500	2610	2321
Zinc	47	170,000	713	278	524	187	114	141
Zirconium	NA	NA	93	119	94	105	75	90

Notes:

Result exceeds State Default Background level

Result exceeds MDNRE Part 201 - Direct Contact Residential and Commercial I Soil Criteria

ID = Identification

LOD = Level of detection

MDNRE = Michigan Department of Natural Resources and Environment

NA = Not available

ppm = Part per million

a Based on MDNRE Part 201 - Direct Contact Residential and Commercial I Soil Criteria

Table 4-2
Laboratory Results – Metals
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Chemical	State Default Background (ppm)	Location ID	EMS08	EMS16	EMS17	EMS20	EMS21	EMS25
		Sample ID	EMS-08-062810	EMS-16-062810	EMS-17-062810	EMS-20-062810	EMS-21-062810	EMS-25-062810
		Soil Regulatory Limit ^a (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Aluminum	6,900	50,000	6,000	10,000	6,600	8,900	9,300	9,100
Antimony	NA	180	1.3	1.7	6	1.2	1.9	3.4
Arsenic	5.8	7.6	9.9	7	14	6.4	6.6	7.7
Barium	75	37,000	210	270	100	180	340	390
Beryllium	NA	410	0.65	1.2	0.4	0.6	0.6	0.62
Cadmium	1.2	550	1.9	1.6	27	0.86	1.9	1.5
Calcium	NA	NA	36,000	29,000	34,000	26,000	27,000	29,000
Chromium ^b	18	790,000	66	28	140	21	25	25
Cobalt	6.8	2,600	5.8	6	8.6	5.6	6.7	7
Copper	32	20,000	56	55	130	46	46	66
Iron	12,000	160,000	20,000	19,000	260,000	17,000	27,000	22,000
Lead	21	400	330	620	2,600	360	600	900
Magnesium	NA	1,000,000	11,000	8,400	6,700	7,500	8,600	8,300
Manganese	440	25,000	2,600	620	5,000	360	540	380
Mercury	0.13	160	0.51	0.27	0.21	0.35	0.44	0.48
Nickel	20	40,000	8.7	15	35	19	16	27
Potassium	NA	NA	1,500	2,100	1,700	2,000	2,100	1,700
Selenium	0.41	2,600	0.6	1.3	0.71	0.61	0.82	0.75
Silver	1	2,500	0.25	0.51	6.1	0.28	0.45	0.36
Sodium	NA	NA	110	200	540	100	140	170
Thallium	NA	35	0.18	0.23	0.16 J	0.18	0.21	0.2
Vanadium	NA	750	34	25	33	22	22	26
Zinc	47	170,000	320	470	9400	270	680	520

Notes:

Shaded result exceeds state default background level.

Bold result exceeds soil regulatory limit.

ID = Identification

MDNRE = Michigan Department of Natural Resources and Environment

NA = Not available

ppm = Part per million

a Based on MDNRE Part 201 - Direct Contact Residential and Commercial I Soil Criteria

b Chromium III criteria were used for chromium, total.

Table 4-3
Laboratory Results – TCLP Metals
Eastern Market Site Assessment
Detroit, Wayne County, Michigan

Chemical	Location ID	EMS08	EMS16	EMS17	EMS20	EMS21	EMS25
	Field Sample ID	EMS-08-062810	EMS-16-062810	EMS-17-062810	EMS-20-062810	EMS-21-062810	EMS-25-062810
	Soil Regulatory Limit ^a (mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Barium	100	0.76	0.49	0.67	0.66	0.5	0.6
Cadmium	1	0.019	0.01 U	0.029	0.01 U	0.01 U	0.01 U
Chromium	5	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Lead	5	0.05 U	0.23	0.05 U	0.05 U	0.075	0.11
Selenium	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Silver	5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Mercury	0.2	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U

Notes:

ID = Identification

mg/L = Milligram per liter

TCLP = Toxicity Characteristic Leaching Procedure

U = Analyte not detected at reporting limit

a Based on Title 40 of the *Code of Federal Regulations*, Part 261

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION



Site: Eastern Market Site

Photograph No.: 1

Direction: Northeast

Subject: Site located west of the intersection of Rivard and Erskine Streets

Date: 6/28/10

Photographer: M. Beer



Site: Eastern Market Site

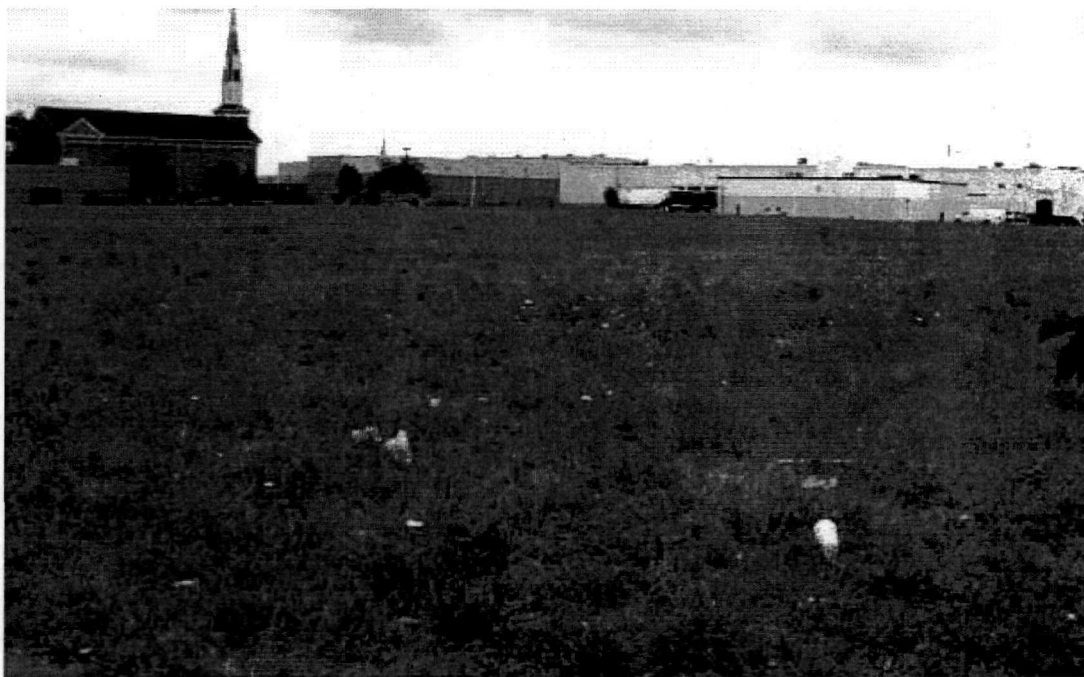
Photograph No.: 2

Direction: West

Subject: Western view of Site

Date: 6/28/10

Photographer: M. Beer



Site: Eastern Market Site
Photograph No.: 3
Direction: North
Subject: Northern view of Site

Date: 6/28/10
Photographer: M. Beer



Site: Eastern Market Site
Photograph No.: 4
Direction: East
Subject: Eastern view of Site

Date: 6/28/10
Photographer: M. Beer



Site: Eastern Market Site
Photograph No.: 5
Direction: South
Subject: Southern view of Site

Date: 6/28/10
Photographer: M. Beer



Site: Eastern Market Site
Photograph No.: 6
Direction: Down
Subject: XRF screening of surface soil

Date: 6/28/10
Photographer: M. Beer

APPENDIX B
DATA VALIDATION REPORT

**EASTERN MARKET #4 SITE
DETROIT, MICHIGAN
DATA VALIDATION REPORT**

Date: July 19, 2010

Laboratory: TriMatrix Laboratories (TriMatrix), Grand Rapids, Michigan

Laboratory Project #: 1006473 and 1006474

Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)

Weston Analytical Work Order #/TDD #: 20405.016.001.1066.00/S05-0001-1005-033

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for 6 soil samples collected for the Eastern Market #4 Site that were analyzed for the following parameters and U.S. Environmental Protection Agency (U.S. EPA) methods:

- Total Metals by SW-846 Methods 6010C, 6020A, and 7471A
- Toxicity Characteristic Leaching Procedure (TCLP) Metals by SW-846 Methods 1311, 6010C, and 7470A

A level II data package was requested from TriMatrix. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

TOTAL METALS BY U.S. EPA SW-846 METHODS 6010C, 6020A, and 7471A

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Date Collected	Date Analyzed
EMS-17-062810	1006473-01	6/28/2010	7/1/2010 – 7/8/2010
EMS-16-062810	1006473-02	6/28/2010	7/1/2010 – 7/8/2010
EMS-20-062810	1006473-03	6/28/2010	7/1/2010 – 7/8/2010
EMS-21-062810	1006473-04	6/28/2010	7/1/2010 – 7/8/2010
EMS-25-062810	1006473-05	6/28/2010	7/1/2010 – 7/8/2010
EMS-08-062810	1006473-06	6/28/2010	7/1/2010 – 7/8/2010

2. Holding Times

The samples were analyzed within the required holding time limit of 28 days from sample collection to analysis for mercury and 180 days from sample collection to analysis for all other metals.

3. **Blank Results**

Method blanks were analyzed with the metals analyses. The blanks were free of target metal contamination above the reporting limits. Iron was detected below the reporting limit in the method blank. However, sample results were much greater and no qualifications were warranted.

4. **Laboratory Control Sample (LCS) Results**

The LCS recoveries were within the QC limits.

5. **Matrix Spike (MS) and MS Duplicate (MSD) Results**

TriMatrix analyzed an MS/MSD pair using a sample from the Eastern Market #4 Site. The percent recoveries and relative percent differences (RPD) were within the QC limits except for as follows.

In some instances, the spikes were not adequately recovered because the spike amount was much lower than the sample concentration. No qualifications are warranted in these instances.

For chromium, the MS recovery was within QC limits but the MSD recovery was slightly high. No qualification was applied for this minor discrepancy.

For potassium, the MS and MSD recoveries were both high. Detected results for potassium were flagged "J" as estimated due to potential matrix interferences.

6. **Overall Assessment**

The total metals data are acceptable for use as qualified based on the information received.

Data Validation Report
Eastern Market #4 Site
TriMatrix Laboratories
Laboratory Project #: 1006473 and 1006474

TCLP METALS BY U.S. EPA SW-846 METHODS 6010C and 7470A

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Date Collected	Date Analyzed
EMS-17-062810	1006474-01	6/28/2010	7/2/2010 – 7/7/2010
EMS-16-062810	1006474-02	6/28/2010	7/2/2010 – 7/7/2010
EMS-20-062810	1006474-03	6/28/2010	7/2/2010 – 7/7/2010
EMS-21-062810	1006474-04	6/28/2010	7/2/2010 – 7/7/2010
EMS-25-062810	1006474-05	6/28/2010	7/2/2010 – 7/7/2010
EMS-08-062810	1006474-06	6/28/2010	7/2/2010 – 7/7/2010

2. Holding Times

The samples were analyzed within the required holding time limit of 28 days from sample collection to analysis for mercury and 180 days from sample collection to analysis for all other metals.

3. Blank Results

Method blanks were analyzed with the metals analyses. The blanks were free of target metal contamination above the reporting limits. Iron was detected below the reporting limit in the method blank. However, sample results were much greater and no qualifications were warranted.

4. LCS Results

The LCS recoveries were within the QC limits.

5. Matrix Spike (MS) and MS Duplicate (MSD) Results

TriMatrix analyzed an MS/MSD pair using a sample from the Eastern Market #4 Site. The percent recoveries and RPDs were within the QC limits except for as follows.

For mercury, the MS and MSD recoveries were slightly below the QC limit. No qualification was applied for this minor discrepancy.

For barium, the MS and MSD recoveries were below the QC limit. Detected results for barium were flagged "J" and as estimated due to potential matrix interferences.

Data Validation Report
Eastern Market #4 Site
TriMatrix Laboratories
Laboratory Project #: 1006473 and 1006474

6. **Overall Assessment**

The TCLP metals data are acceptable for use as qualified based on the information received.

Data Validation Report
Eastern Market #4 Site
TriMatrix Laboratories
Laboratory Project #: 1006473 and 1006474

ATTACHMENT

**TRIMATRIX LABORATORIES
RESULTS SUMMARY WITH DATA QUALIFIERS**



July 09, 2010

Weston Solutions, Inc. - Illinois
Attn: Ms. Lisa Graczyk/Dynamac
20 North Wacker Drive, Suite 1210
Chicago, IL 60606

Project: Eastern Market #4

Dear Ms. Lisa Graczyk/Dynamac,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
1006473	06/30/2010	EMS0610A

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Lisa M. Harvey".

Lisa M. Harvey
Project Chemist

Enclosures(s)



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-17-062810**
Lab Sample ID: **1006473-01**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006473**
Description: **EMS0610A**
Sampled: **06/28/10 11:30**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	6600	10	2.7	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
Antimony	6.0	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	07/01/10 16:09	MSM	1006552
*Arsenic	14	0.20	0.079	mg/kg dry wt.	2	USEPA-6020A	07/02/10 09:50	DSC	1006532
Barium	100	0.50	0.10	mg/kg dry wt.	5	USEPA-6020A	07/02/10 09:47	DSC	1006532
Beryllium	0.40	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:02	DWJ	1006532
Cadmium	27	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:02	DWJ	1006532
Calcium	34000	50	6.8	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
Chromium	140	1.0	0.28	mg/kg dry wt.	5	USEPA-6020A	07/02/10 09:47	DSC	1006532
*Cobalt	8.6	0.20	0.016	mg/kg dry wt.	2	USEPA-6020A	07/02/10 09:50	DSC	1006532
Copper	130	0.50	0.39	mg/kg dry wt.	5	USEPA-6020A	07/02/10 09:47	DSC	1006532
Iron	260000	500	47	mg/kg dry wt.	100	USEPA-6010C	07/07/10 10:02	KLV	1006530
Lead	2600	10	5.4	mg/kg dry wt.	100	USEPA-6020A	07/02/10 09:44	DSC	1006532
Magnesium	6700	50	4.9	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
Manganese	5000	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
Mercury	0.21	0.046	0.015	mg/kg dry wt.	1	USEPA-7471A	07/08/10 10:35	KLV	1006647
Nickel	35	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
Potassium	1700 J	50	7.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
*Selenium	0.71	0.40	0.18	mg/kg dry wt.	2	USEPA-6020A	07/02/10 09:50	DSC	1006532
Silver	6.1	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:02	DWJ	1006532
Sodium	540	50	5.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:45	KLV	1006530
*Thallium	0.16 J	0.25	0.080	mg/kg dry wt.	5	USEPA-6020A	07/02/10 09:47	DSC	1006532
*Vanadium	33	0.20	0.079	mg/kg dry wt.	2	USEPA-6020A	07/02/10 09:50	DSC	1006532
Zinc	9400	400	190	mg/kg dry wt.	400	USEPA-6020A	07/02/10 10:58	DSC	1006532

24
7/19/10

*See Statement of Data Qualifications

Page 2 of 15

This report shall not be reproduced, except in full, without written authorization of TriMatrix Laboratories, Inc.
Individual sample results relate only to the sample tested.

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-16-062810**
Lab Sample ID: **1006473-02**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006473**
Description: **EMS0610A**
Sampled: **06/28/10 11:35**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	10000	10	2.7	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Antimony	1.7	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	07/01/10 16:11	MSM	1006552
Arsenic	7.0	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Barium	270	1.0	0.21	mg/kg dry wt.	10	USEPA-6020A	07/02/10 09:57	DSC	1006532
Beryllium	1.2	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Cadmium	1.6	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Calcium	29000	50	6.8	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Chromium	28	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Cobalt	6.0	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Copper	55	0.20	0.16	mg/kg dry wt.	2	USEPA-6020A	07/02/10 10:00	DSC	1006532
Iron	19000	5.0	0.47	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Lead	620	2.0	1.1	mg/kg dry wt.	20	USEPA-6020A	07/02/10 09:54	DSC	1006532
Magnesium	8400	50	4.9	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Manganese	620	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Mercury	0.27	0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	07/08/10 10:40	KLV	1006647
Nickel	15	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Selenium	1.3	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Potassium	2100 J	50	7.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Silver	0.51	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Sodium	200	50	5.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:49	KLV	1006530
Thallium	0.23	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Vanadium	25	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:06	DWJ	1006532
Zinc	470	20	9.3	mg/kg dry wt.	20	USEPA-6020A	07/02/10 09:54	DSC	1006532

21
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-20-062810**
Lab Sample ID: **1006473-03**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006473**
Description: **EMS0610A**
Sampled: **06/28/10 11:45**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	8900	10	2.7	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Antimony	1.2	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	07/01/10 16:14	MSM	1006552
Arsenic	6.4	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Barium	180	0.50	0.10	mg/kg dry wt.	5	USEPA-6020A	07/02/10 10:06	DSC	1006532
Beryllium	0.60	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Cadmium	0.86	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Calcium	26000	50	6.8	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Chromium	21	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Cobalt	5.6	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Copper	46	0.10	0.078	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Iron	17000	5.0	0.47	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Lead	360	1.0	0.54	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:03	DSC	1006532
Magnesium	7500	50	4.9	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Manganese	360	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Mercury	0.35	0.046	0.015	mg/kg dry wt.	1	USEPA-7471A	07/08/10 10:44	KLV	1006647
Nickel	19	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Potassium	2000 J	50	7.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Selenium	0.61	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Silver	0.28	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Sodium	100	50	5.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 08:52	KLV	1006530
Thallium	0.18	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Vanadium	22	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:09	DWJ	1006532
Zinc	270	10	4.6	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:03	DSC	1006532

14
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-21-062810**
Lab Sample ID: **1006473-04**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006473**
Description: **EMS0610A**
Sampled: **06/28/10 12:05**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	9300	10	2.7	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Antimony	1.9	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	07/01/10 16:16	MSM	1006552
Arsenic	6.6	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Barium	340	1.0	0.21	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:19	DSC	1006532
Beryllium	0.60	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Cadmium	1.9	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Calcium	27000	50	6.8	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Chromium	25	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Cobalt	6.7	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Copper	46	0.10	0.078	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Iron	27000	5.0	0.47	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Lead	600	2.0	1.1	mg/kg dry wt.	20	USEPA-6020A	07/02/10 10:10	DSC	1006532
Magnesium	8600	50	4.9	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Manganese	540	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Mercury	0.44	0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	07/08/10 10:49	KLV	1006647
Nickel	16	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Selenium	0.82	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Potassium	2100 J	50	7.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Silver	0.45	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Sodium	140	50	5.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:02	KLV	1006530
Thallium	0.21	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Vanadium	22	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:13	DWJ	1006532
Zinc	680	20	9.3	mg/kg dry wt.	20	USEPA-6020A	07/02/10 10:10	DSC	1006532

20
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-25-062810**
Lab Sample ID: **1006473-05**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006473**
Description: **EMS0610A**
Sampled: **06/28/10 12:20**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	9100	10	2.7	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Antimony	3.4	0.091	0.041	mg/kg dry wt.	1	USEPA-6020A	07/01/10 16:18	MSM	1006552
Arsenic	7.7	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Barium	390	1.0	0.21	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:26	DSC	1006532
Beryllium	0.62	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Cadmium	1.5	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Calcium	29000	50	6.8	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Chromium	25	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Cobalt	7.0	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Copper	66	0.20	0.16	mg/kg dry wt.	2	USEPA-6020A	07/02/10 10:28	DSC	1006532
Iron	22000	5.0	0.47	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Lead	900	2.0	1.1	mg/kg dry wt.	20	USEPA-6020A	07/02/10 10:23	DSC	1006532
Magnesium	8300	50	4.9	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Manganese	380	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Mercury	0.48	0.046	0.015	mg/kg dry wt.	1	USEPA-7471A	07/08/10 10:54	KLV	1006647
Nickel	27	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Potassium	1700	50	7.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Selenium	0.75	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Silver	0.36	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Sodium	170	50	5.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:06	KLV	1006530
Thallium	0.20	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Vanadium	26	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:17	DWJ	1006532
Zinc	520	20	9.3	mg/kg dry wt.	20	USEPA-6020A	07/02/10 10:23	DSC	1006532

20
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-08-062810**
Lab Sample ID: **1006473-06**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006473**
Description: **EMS0610A**
Sampled: **06/28/10 12:30**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Aluminum	6000	100	27	mg/kg dry wt.	10	USEPA-6010C	07/07/10 10:26	KLV	1006530
Antimony	1.3	0.094	0.042	mg/kg dry wt.	1	USEPA-6020A	07/01/10 16:20	MSM	1006552
Arsenic	9.9	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
*Barium	210	1.0	0.21	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:31	DSC	1006532
Beryllium	0.65	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
Cadmium	1.9	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
*Calcium	36000	500	68	mg/kg dry wt.	10	USEPA-6010C	07/07/10 10:26	KLV	1006530
*Chromium	66	0.40	0.11	mg/kg dry wt.	2	USEPA-6020A	07/02/10 10:39	DSC	1006532
Cobalt	5.8	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
Copper	56	0.20	0.16	mg/kg dry wt.	2	USEPA-6020A	07/02/10 10:39	DSC	1006532
*Iron	20000	2500	230	mg/kg dry wt.	500	USEPA-6010C	07/07/10 10:06	KLV	1006530
*Lead	330	1.0	0.54	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:31	DSC	1006532
*Magnesium	11000	50	4.9	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:10	KLV	1006530
*Manganese	2600	50	12	mg/kg dry wt.	50	USEPA-6010C	07/07/10 10:16	KLV	1006530
Mercury	0.51	0.044	0.014	mg/kg dry wt.	1	USEPA-7471A	07/08/10 10:59	KLV	1006647
*Nickel	8.7	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:10	KLV	1006530
*Potassium	1500	50	7.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:10	KLV	1006530
*Selenium	0.60	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
*Silver	0.25	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
Sodium	110	50	5.2	mg/kg dry wt.	1	USEPA-6010C	07/07/10 09:10	KLV	1006530
Thallium	0.18	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	07/01/10 22:20	DWJ	1006532
Vanadium	34	0.20	0.079	mg/kg dry wt.	2	USEPA-6020A	07/02/10 10:39	DSC	1006532
*Zinc	320	10	4.6	mg/kg dry wt.	10	USEPA-6020A	07/02/10 10:31	DSC	1006532

24
7/19/10

*See Statement of Data Qualifications

Page 7 of 15

This report shall not be reproduced, except in full, without written authorization of TriMatrix Laboratories, Inc.
Individual sample results relate only to the sample tested.

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com



July 08, 2010

Weston Solutions, Inc. - Illinois
Attn: Ms. Lisa Graczyk/Dynamac
20 North Wacker Drive, Suite 1210
Chicago, IL 60606

Project: Eastern Market #4

Dear Ms. Lisa Graczyk/Dynamac,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
1006474	06/30/2010	EMS0610B

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Lisa M. Harvey", written in a cursive style.

Lisa M. Harvey
Project Chemist

Enclosures(s)



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-17-062810**
Lab Sample ID: **1006474-01**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006474**
Description: **EMS0610B**
Sampled: **06/28/10 11:30**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

TCLP Metals by EPA 1311/6000/7000 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Arsenic	<0.10	0.10	5	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506
Barium	0.67	0.35	100	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506
Cadmium	0.029	0.010	1	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506
Chromium	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506
Lead	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506
Mercury	<0.00020	0.00020	0.2	mg/L	1	USEPA-7470A	07/07/10 09:35	KLV	1006564
Selenium	<0.10	0.10	1	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506
Silver	<0.010	0.010	5	mg/L	1	USEPA-6010C	07/02/10 09:34	KLV	1006506

LM
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-16-062810**
Lab Sample ID: **1006474-02**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006474**
Description: **EMS0610B**
Sampled: **06/28/10 11:35**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

TCLP Metals by EPA 1311/6000/7000 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Arsenic	<0.10	0.10	5	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506
Barium	0.49 J	0.35	100	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506
Cadmium	<0.010	0.010	1	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506
Chromium	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506
Lead	0.23	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506
Mercury	<0.00020	0.00020	0.2	mg/L	1	USEPA-7470A	07/07/10 09:40	KLV	1006564
Selenium	<0.10	0.10	1	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506
Silver	<0.010	0.010	5	mg/L	1	USEPA-6010C	07/02/10 09:39	KLV	1006506

LD
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-20-062810**
Lab Sample ID: **1006474-03**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006474**
Description: **EMS0610B**
Sampled: **06/28/10 11:45**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

TCLP Metals by EPA 1311/6000/7000 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Arsenic	<0.10	0.10	5	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506
Barium	0.66 J	0.35	100	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506
Cadmium	<0.010	0.010	1	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506
Chromium	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506
Lead	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506
Mercury	<0.00020	0.00020	0.2	mg/L	1	USEPA-7470A	07/07/10 09:45	KLV	1006564
Selenium	<0.10	0.10	1	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506
Silver	<0.010	0.010	5	mg/L	1	USEPA-6010C	07/02/10 09:43	KLV	1006506

28
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-21-062810**
Lab Sample ID: **1006474-04**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006474**
Description: **EMS0610B**
Sampled: **06/28/10 12:05**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

TCLP Metals by EPA 1311/6000/7000 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Arsenic	<0.10	0.10	5	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506
Barium	0.50 J	0.35	100	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506
Cadmium	<0.010	0.010	1	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506
Chromium	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506
Lead	0.075	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506
Mercury	<0.00020	0.00020	0.2	mg/L	1	USEPA-7470A	07/07/10 09:50	KLV	1006564
Selenium	<0.10	0.10	1	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506
Silver	<0.010	0.010	5	mg/L	1	USEPA-6010C	07/02/10 09:47	KLV	1006506

28
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-25-062810**
Lab Sample ID: **1006474-05**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006474**
Description: **EMS0610B**
Sampled: **06/28/10 12:20**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

TCLP Metals by EPA 1311/6000/7000 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Arsenic	<0.10	0.10	5	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506
Barium	0.60 J	0.35	100	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506
Cadmium	<0.010	0.010	1	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506
Chromium	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506
Lead	0.11	0.050	5	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506
Mercury	<0.00020	0.00020	0.2	mg/L	1	USEPA-7470A	07/07/10 09:55	KLV	1006564
Selenium	<0.10	0.10	1	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506
Silver	<0.010	0.010	5	mg/L	1	USEPA-6010C	07/02/10 09:51	KLV	1006506

2 J
7/19/10



ANALYTICAL REPORT

Client: **Weston Solutions, Inc. - Illinois**
Project: **Eastern Market #4**
Client Sample ID: **EMS-08-062810**
Lab Sample ID: **1006474-06**
Matrix: **Soil**
Percent Solids: **n/a**

Work Order: **1006474**
Description: **EMS0610B**
Sampled: **06/28/10 12:30**
Sampled By: **Matt Beer**
Received: **06/30/10 09:30**

TCLP Metals by EPA 1311/6000/7000 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Arsenic	<0.10	0.10	5	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507
*Barium	0.76 J	0.35	100	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507
Cadmium	0.019	0.010	1	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507
Chromium	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507
Lead	<0.050	0.050	5	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507
*Mercury	<0.00020	0.00020	0.2	mg/L	1	USEPA-7470A	07/07/10 10:09	KLV	1006564
Selenium	<0.10	0.10	1	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507
Silver	<0.010	0.010	5	mg/L	1	USEPA-6010C	07/02/10 10:04	KLV	1006507

LY
7/19/10

*See Statement of Data Qualifications

Page 7 of 11

This report shall not be reproduced, except in full, without written authorization of TriMatrix Laboratories, Inc.
Individual sample results relate only to the sample tested.

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com